IN THE FIELD

Field Museum
Member Magazine

Vol. 96, No. 3
Fall 2025

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ON THE COVER
Illustration of *Plesiadapis*, a proto-primate, in a wingnut tree.
JAY RYAN © FIELD MUSEUM

Let us know your thoughts about *In The Field* magazine. Email your comments to ITF@fieldmuseum.org

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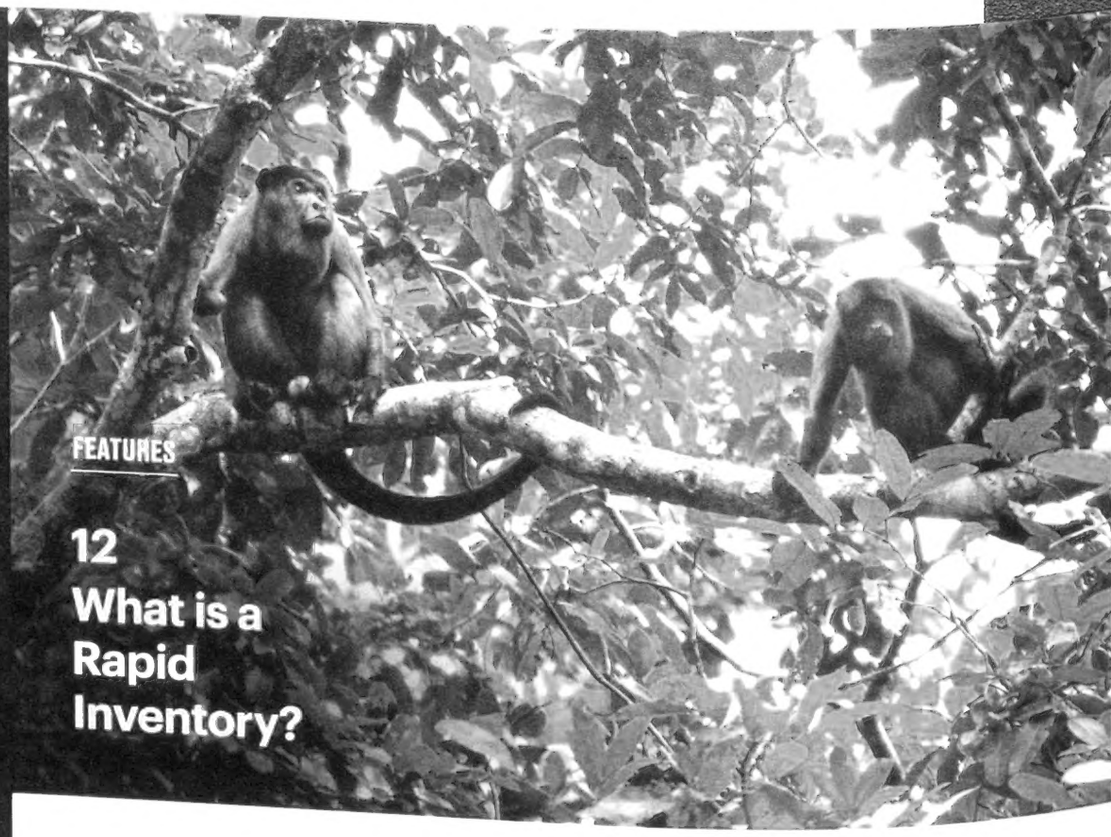

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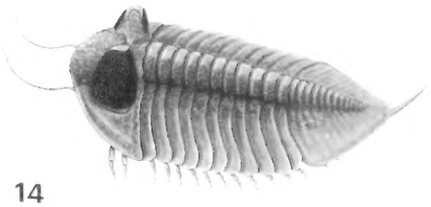

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Dear Friends,

In a time of climate change and biodiversity loss, we seek to make positive changes to protect nature and our communities. As a natural history museum, the Field is in a unique position to provide on-the-ground conservation action informed by our collections and research and led by our Keller Science Action Center, which includes ecologists, social scientists, educators, analysts, and artists. Over the last 30 years, their work has contributed to 29 million acres of protected areas, 40,000 youth trained in environmental science and stewardship, 300 communities engaged in global conservation, and 33 rapid inventories in some of the most ecologically diverse forests on Earth.

Science action puts our resources to work for demonstrable community-driven conservation results. These efforts have a dual geographic focus: on the Chicago Wilderness, home to 10 million people living in a conservation mosaic of green spaces and built environments, and the Andes-Amazon and Guiana Shield, where natural and cultural diversity is exceptionally high in vast, intact landscapes.

I hope you'll enjoy reading about conservation action starting on page 12 of this issue. We celebrate the support from members and donors that enables this work and much more. We are especially pleased to celebrate your support on Members' Nights, which this year will take place on **May 14 and 15**. I look forward to seeing you there and, as we continue to evolve our membership program, to sharing new opportunities for you and your family to connect with nature and the human story with us.

Thank you for your friendship to the Museum,

Julian Siggers

Julian Siggers, PhD
President and CEO

Halloween at the Field

SPOOKTACULAR SCIENCE

Saturday, October 25 | 10am–2pm (Members-only event)

Get ready for a frightfully fun adventure at the Field Museum's special member opportunity, Spooktacular Science!

Come face to face with Halloween-themed specimens and fossils, shared by our very own fearless scientists—if you dare! Trick-or-treat your way through eerie surprises and hands-on learning that bring creepy creatures and mysterious artifacts to life.

Don't forget to wear your best costume for your annual Halloween photo at your favorite natural history museum!

Free with Museum Member admission—costumes encouraged, curiosity required!

Member families visiting on Saturday, October 25, are welcome to stop into the Founders' Room, located on the Main Level next to the Museum Store from 10am to 2pm.

Recommend for families with children ages 3 and up.

BOO WITH SUE

Friday, October 17 | 5:30pm–9:30pm (ticketed family event)

Trick-or-treat yourself to a night at the Field Museum! This after hours Halloween party will be a scream for all ages. Whether you're a ghost, ghoul, or guest, you'll have the opportunity to trick or treat with SUE and our team of mad scientists. Along the way, get up close and personal with spooky specimens from the Museum's collections.

Costumes encouraged! For the safety of all guests, please do not wear costumes that cover your face or include prop weapons of any kind. Scan the QR code to register or go online to **fieldmuseum.org/our-events**.

To register for Boo with SUE and other Field Museum events, visit us online at fieldmuseum.org/our-events or scan the QR code.

SECRETS AND SPECIMENS

Thursday, October 23 | 6–9 PM (ticketed 21+ event)

Step into the shadows of science at this 21+ after-hours event where eerie tales meet evidence. Secrets and Specimens invites you to explore strange stories and unsettling legends from the Field's collections to uncover how science helps explain the unexplainable. Hear how the Museum played a role in unraveling mysteries—from the terrifying tale of the Tsavo Lions, to how forensic botany helped in a local missing persons case, to the haunting final notes of herpetologist Karl Patterson Schmidt.

Follow the clues, and you may even discover a hidden speakeasy tucked within the Museum, offering themed drinks and a moody retreat for the curious.

Tickets include light snacks, beer, wine and a specialty cocktail. Additional food and beverages will be available for purchase. Visit **fieldmuseum.io/secrets-and-specimens** for more information and to reserve your tickets.

UNDERGROUND MISADVENTURE

Friday, October 3–Sunday, November 2

Something strange is happening at the Field Museum. Underground MISadventure is a creepy, crawly, downright spooky twist on an old favorite. A chilling Halloween experience that comes to life, Underground MISadventure opens on October 3 and is included in an All-Access Pass.

Come face-to-face with things that go bump underground...if you dare!

REPTILES ALIVE!

See it before it's gone!

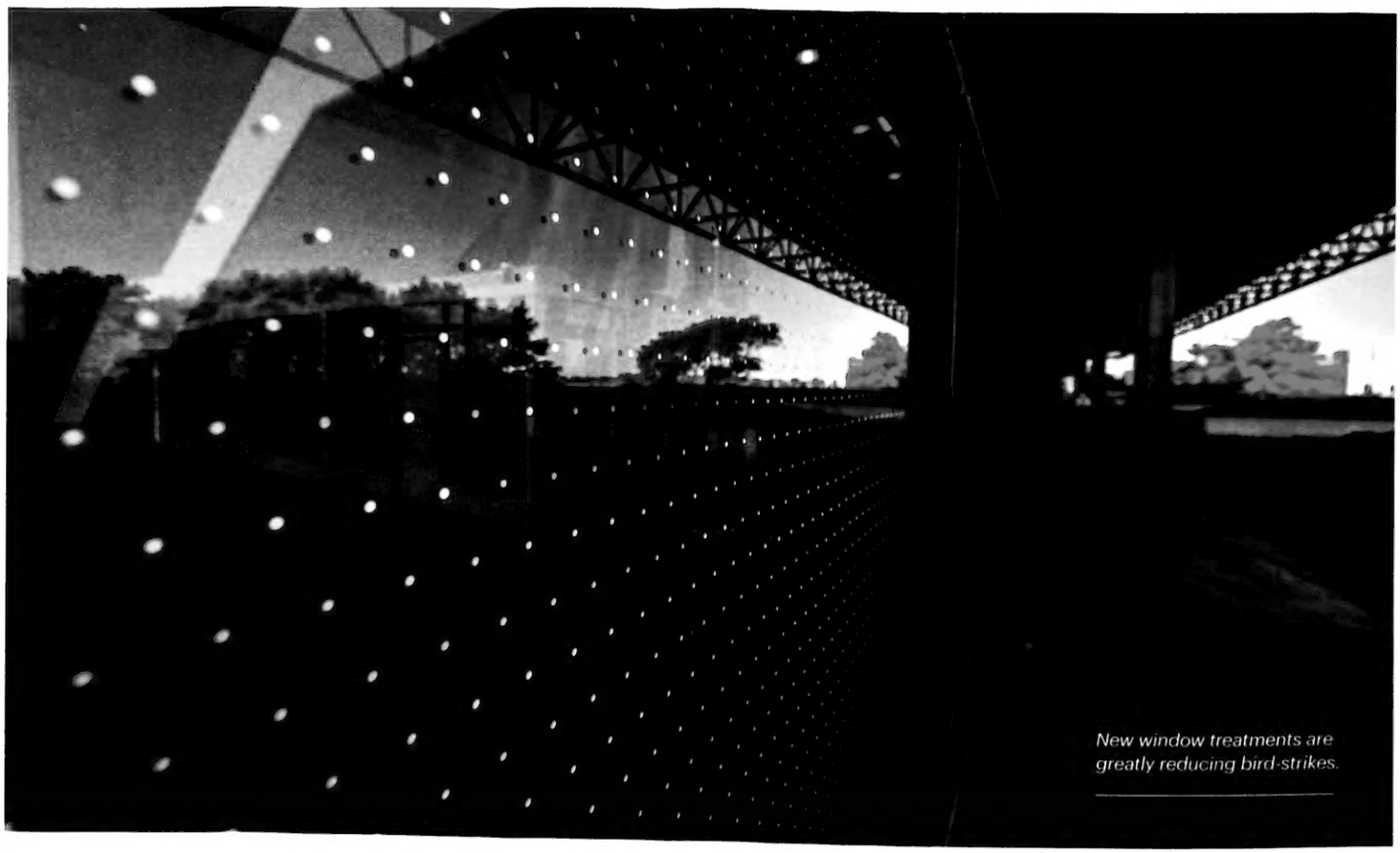
Explore the fascinating world of reptiles in this one-of-a-kind exhibition! Combining original Field Museum science with live animals and engaging interactives, *Reptiles Alive!* offers an immersive experience into the lives of snakes, lizards, crocodiles, and more. Witness 20 live reptiles, including a baby American alligator, red spitting cobra, European legless lizard, and emerald tree boa housed in captivating enclosures. Discover their habitats and adaptations, as well as the groundbreaking research of Sara Ruane, PhD.

Reptiles Alive! closes at the Field Museum on April 5, 2026.

Reptiles Alive! was created by Peeling Productions at Clyde Peeling's Reptiland and the Field Museum.

(Above) Meet Rambo, a 14' reticulated python (Malayopython reticulatus).

(Left) Reptiles got rizz! Especially Guangi, our Cuban rock iguana (Cyclura nubila).



New window treatments are greatly reducing bird-strikes.

© PAUL GROLEAU/FEATHERED EDGE

BIRD-FRIENDLY GLASS INSTALLED AT MCCORMICK PLACE

BY DAVID WILLARD, PHD, FORMER BIRD RESEARCHER, GANTZ FAMILY COLLECTION CENTER; AND **JOHN BATES, PHD,** ROWE FAMILY CURATOR OF EVOLUTIONARY BIOLOGY, NEGAUNEE INTEGRATIVE RESEARCH CENTER

The night of October 4 and 5, 2023, the winds in the Midwest shifted northwest. Prior to this, there had been a long stretch of unfavorable winds for fall bird migration, resulting in a buildup of birds to the north, waiting for the right conditions to head south to their wintering grounds. For birders out at dawn, it was as if a dam had broken. Marky Mutchler, Jacob Drucker, and Ryan Fuller—then resident graduate students at the Field Museum—were birding at Promontory Point in Hyde Park and estimated nearly 200,000 birds streamed by in just an hour of observation. Field Museum Senior Ecologist Doug Stotz, who has been carefully observing birds in the region for nearly fifty years, described that morning as unprecedented.

Unfortunately, the spectacle was not limited to living birds. The Field Museum has been monitoring window collisions of birds at the McCormick Place Lakeside Center for more than 40 years with over 40,000 casualties recovered. On that morning in 2023, nothing prepared us for what we found. On the ground at the base of the extensive glass windows was a carpet of birds. It took two of us hours to gather the dead birds and rescue and release those that were just stunned. The final count was 977 dead and about 100 rescued at McCormick Place alone. The number of birds lost was nearly five times higher than any previous single-night total.

The news of that night received international attention. Over the summer of 2024, McCormick Place, in collaboration with the U.S. Fish and Wildlife Service, installed bird-friendly film on its windows. This film, applied on the outside of the glass, has white dots spaced two inches apart. It barely affects the aesthetics of the building, but has a dramatic effect on bird collisions. We have watched birds flying directly toward the windows and veering away at the last second. Continued monitoring through the fall of 2024 and spring of 2025 shows a greater than 90% reduction in fatalities.

On that morning in 2023, volunteers for the Chicago Bird Collision Monitors were spread out monitoring buildings of downtown Chicago. They picked up over 2,000 birds, highlighting that bird collisions are not a single-building problem. We hope that the demonstrated success of the film at McCormick Place leads to widespread use and the transformation of Chicago into a bird-safe city.

(Below) Species like this Palm Warbler were primary casualties of the window strikes on 4-5 Oct. 2024.

© JOHN BATES

CHICAGO RODENTS ADAPT TO CITY LIFE

BY ANDERSON FEIJÓ, PHD, ASSISTANT CURATOR OF MAMMALS; AND **STEPHANIE SMITH, PHD,** MAMMOLOGIST, XCT LABORATORY MANAGER, NEGAUNEE INTEGRATIVE RESEARCH CENTER

Chicago is home to diverse wildlife that has to cope with an ever-growing human population. Last year, with support from the Women in Science initiative of the Field Museum's Women's Board, we launched a new project to investigate how the city's growth is affecting two familiar rodents: chipmunks, and voles.

Our team, including two Women in Science interns (Alyssa Stringer, Knox College, and Luna Bian, Stevenson High School), analyzed nearly 400 specimens from the Field Museum's mammal collection, accumulated in Chicago since 1893. The goal was to understand the effects of urban life on these animals over time. The Museum's unique collection from the local Chicago area allowed us to build a dataset covering multiple human lifespans, a feat that can only be accomplished with extensive natural history collections, like those at the Field.

We found that chipmunks are gradually becoming larger, but their cheek teeth (molars) are shrinking. This may reflect a shift in diet, as they are increasingly exposed to softer, higher-calorie human foods which require less oral processing than seeds and nuts. Voles, in contrast, showed a reduction in the size of their auditory bullae, which house the inner ear bones involved in hearing and may reflect an adaptation to cope with urban noise pollution.

These contrasting responses highlight an important lesson: not all animals respond to human pressures in the same way. Even two small mammals living in the same region can show very different adaptations to similar environmental challenges.

Our study showcases both the importance of Field Museum collections to track changes over time, and the responsibility humans have to preserve and protect our natural environment, even in an urban setting.

*(Below) Tagged skins of chipmunks (*Tamias striatus*) in the FMNH Mammalogy collection. These specimens are over 110 years old, and are helping scientists understand the long-term impacts of urbanization on wildlife.*

SARA WATSON

PREHISTORIC INNOVATIONS CONNECTED COMMUNITIES

BY SARA WATSON, PHD, NEGAUNEE POSTDOCTORAL FELLOW, NEGAUNEE INTEGRATIVE RESEARCH CENTER

The Earth of the last Ice Age (about 26,000–19,000 years ago) was very different from today's world.

Along the southern coast of South Africa, receding coastlines exposed an area of the continental shelf covering about 36,000km² known as the Palaeo-Agulhas Plain. This now-extinct ecosystem was a highly productive landscape with abundant grasslands, wetlands, permanent water drainage systems, and seasonal flood plains. The Palaeo-Agulhas Plain was likely most similar to the present day Serengeti in East Africa. It would likely have supported large herds of migratory animals and the people who hunted them.

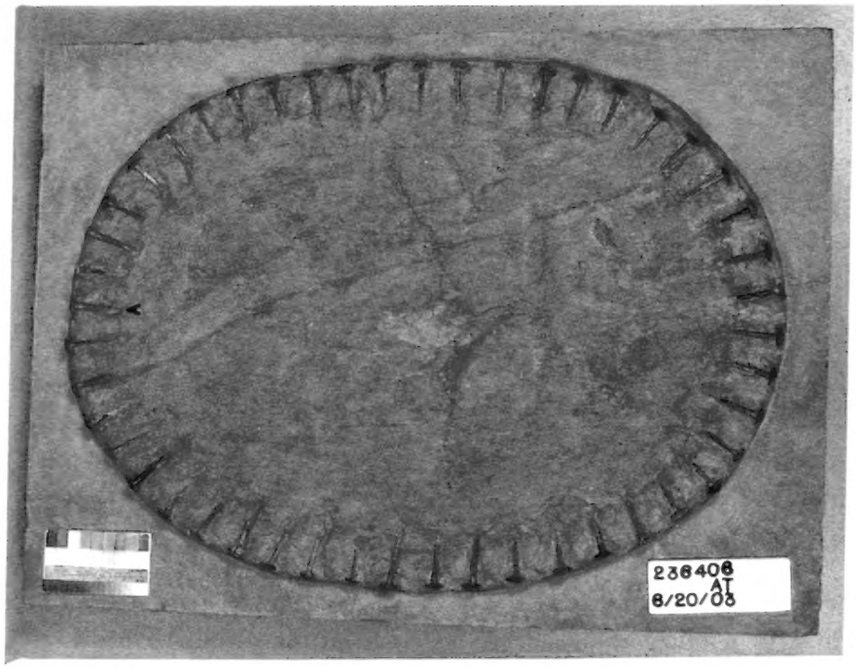
We now know more about how these people lived thanks to data from a new archaeological site called Knysna Eastern Heads Cave 1. In my research, I analyzed the cave (dating 19,000–18,000 years ago) and uncovered how the techniques used to make them hint at the ways prehistoric people travelled, interacted, and shared their craft.

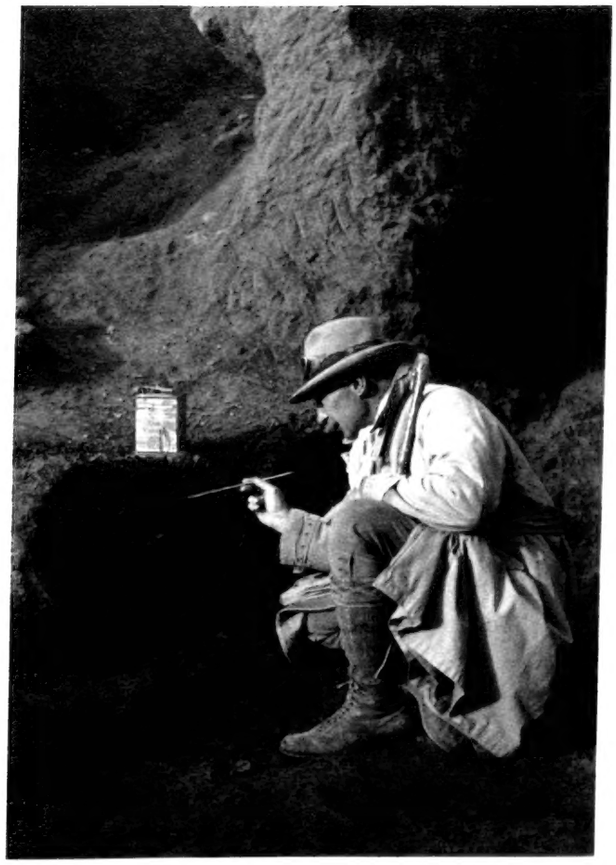
The Robberg technocomplex is one of Southern Africa's most distinctive and widespread stone tool technologies. This refers to a specific type of stone tool technology associated with an archaeological culture found in Southern Africa. We see the first appearance of Robberg technology in this region near the peak of the last Ice Age around 26,000 years ago. People continued producing these tools until around 12,000 years ago, when climate conditions were warmer. Robberg tools, like those found at the Knysna site, are thought to be replaceable components in composite tools, like barbs set into arrow shafts used to hunt the migratory herds on the Palaeo-Agulhas Plain.

Archaeological sites containing Robberg tools have been found in South Africa, Lesotho, and Eswatini, indicating a widespread adoption of this technology by people across Southern Africa. The tools from the Knysna site share many characteristics with those from other sites, which suggests people were sharing information through social networks that may have spanned the entire width of the continent.

Something we can say with confidence is that we have a very long, rich history as a species, and our innovative and social natures go back a lot further in time than most people realize. Humans living during the last Ice Age had complex technologies to solve their problems, made art and music, connected with people in other communities, and in some places even had pet dogs. Despite the dramatic differences in the world around us, these Ice Age peoples were not very different from those living today.

(Above) Archaeologists working at KEH-1 form a chain to pass sandbags up the 23-meter cliff where the cave resides.





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ANCIENT CHARIOTS IN KISH

BY MALAYA TINDONGAN, ASSISTANT EDITOR

One morning in December 1927, in the city of Kish, an excavator named Ali Daud discovered bronze pins in the shape of an oval among skeletal remains of draft animals. As the work of Daud's team continued, another set of pins was found. The ovals of bronze pins turned out to be ancient chariot wheels that had once been made of wood.

The ancient city of Kish (occupied from 3,300 BC to the seventh century AD) was located on the floodplain of the Euphrates River about 80 kilometers south of modern-day Baghdad. It became a very powerful city-state during the Bronze Age; its control eventually spread over the entirety of the Sumer and Akkad–civilizations that occupied areas of modern-day Iraq.

Daud was a part of an archeological excavation of Kish from 1923–1933, organized by Oxford University and joined by Henry Field and the Field Museum. Along with members from the Ashmolean Museum at Oxford University and what was then called the Baghdad Archaeological Museum (today the Iraq National Museum), the team explored 17 mounds. At the end of each excavation season, the artifacts were divided among the three institutions. The Iraq National Museum kept half of what was found, in addition to any unique objects, and the remainder was split between the Field and Oxford University.

The excavation of this area centered on ziggurats–pyramid stepped temple towers. Many items were recovered, including ceramic vessels, a bronze and gold dagger, and ostrich egg cups. Within the cemetery, human remains were found alongside wheeled vehicles. Wealthier individuals were buried with more possessions, closer to ziggurats, and sometimes with chariots or wheeled vehicles.

At the time, the discovered chariot wheels were only recognizable because of the pins. Over thousands of years the wood had turned into soil. An axle was also found but quickly fell to pieces during its removal.

Even though the wooden wheels no longer remained, the soil still retained the relative shape of the wheels due to how they were made. Over time, as the chariots were subjected to pressure from being buried, the thickness of the wheels were reduced and they became oval-shaped. The excavation team applied 16 coats of oak varnish to the wheels to preserve them for transportation from the site. They were enclosed in a wooden box, covered in cheese cloth, and then plaster for extra protection.

Weeks later, the digging progressed deeper and closer to the water table. Exposure to consistent moisture or dryness better preserves organic objects, so items found further down were in better condition. At the center of the trench, another chariot-like vehicle was found with four wheels. These wheels were preserved in the same manner as the first wheels that were found, and two of them now live in the Field's collection.

(Above, left) One of the preserved wheels after conservation work.

(Above, right) Henry Field applying oak varnish to one of the wheels.

© ILLUSTRATION: JAY RYAN / FIELD MUSEUM

WE ALL KNOW THE STORY OF THE ASTEROID THAT TRIGGERED THE MASS EXTINCTION OF THE DINOSAURS. AND, WE KNOW THAT LIFE CAME BACK AFTER THE IMPACT AND EVOLVED INTO THE FLORA AND FAUNA WE SEE AROUND US. BUT WHAT HAPPENED RIGHT AFTER THAT ASTEROID SLAMMED INTO THE YUCATÁN PENINSULA 66 MILLION YEARS AGO?

By Lauren Boegen
EXHIBITION PROJECT MANAGER

AFTER THE AGE OF DINOSAURS

AS THE EARTH CONTINUES TO REBOUND, SCHOOL-BUS-LENGTH SNAKES, FLIGHTLESS BIRDS THE HEIGHT OF A REFRIGERATOR, HORSES THE SIZE OF SMALL DOGS, AND LEAVES THE SIZE OF KITCHEN COUNTERS APPEAR AND RETREAT, UNTIL A THRIVING, FULL ECOSYSTEM THAT WE WOULD RECOGNIZE REEMERGES.

After the Age of Dinosaurs begins with this cataclysmic impact and brings visitors through the 15 million years directly after. While the asteroid had swift consequences, this walk through time provides the longer context of which plants and animals died, which survived, and what happened to life on Earth as it rebounded from a violent, extreme event.

Venture through the immediate aftermath of impact into the regrowth of the forests—wildly denser without large dinosaurs to eat and trample them. As the Earth continues to rebound, school-bus-length snakes, flightless birds the height of a refrigerator, horses the size of small dogs, and leaves the size of kitchen counters appear and retreat, until a thriving, full ecosystem that we would recognize reemerges.

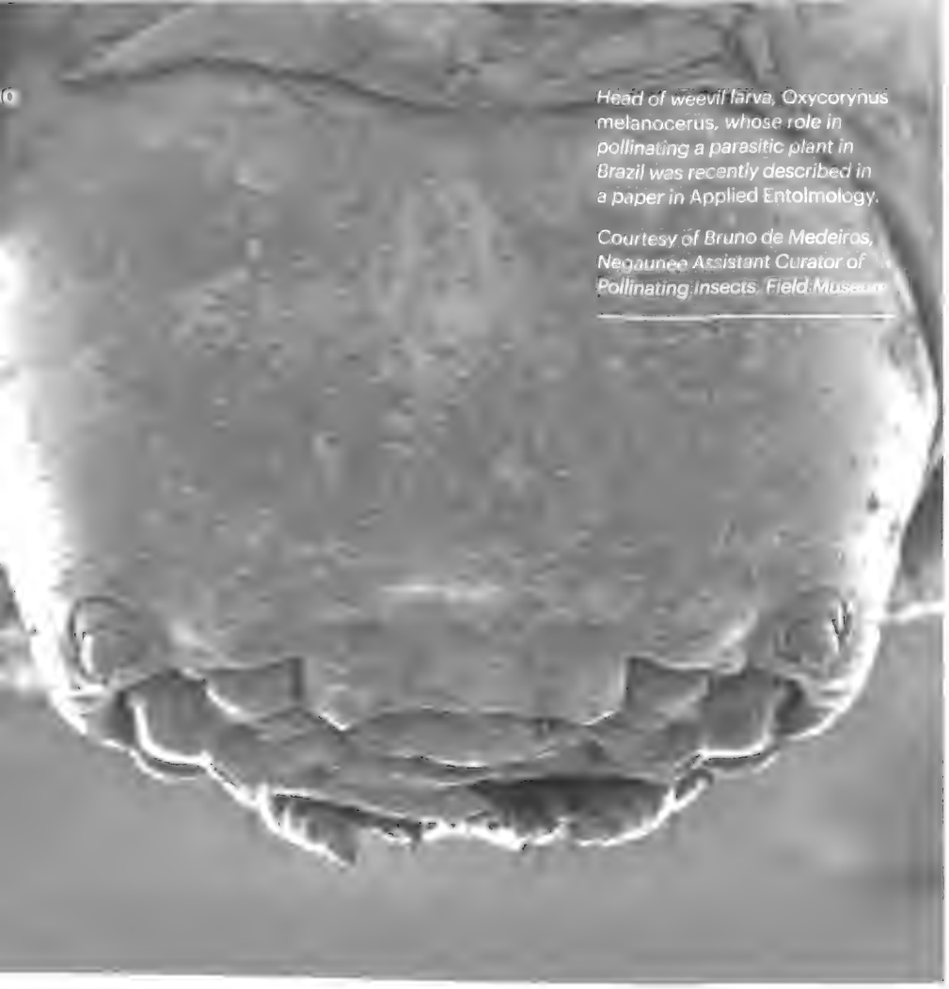
The exhibition is full of delightful moments of discovery. We are especially excited to be working with local Chicago artist Jay Ryan to illustrate many of these bizarre creatures and unfamiliar landscapes, giving life to each one in his distinctive style. Engaging media, touchable interactives, immersive sound, and never-before-seen specimens also take center stage. *After the Age of Dinosaurs* brings together the work of scientists around the Museum to tell the story that set the stage for life on Earth today.

While the asteroid was terribly destructive in a specific area of the world, its most consequential change was how the aftermath of the impact changed the Earth's climate. Just as rapid change doomed the dinosaurs, the rapid changes of our current climate spell disaster. In this case, humans are the asteroid, accelerating a rate of change in an unprecedented way. *After the Age of the Dinosaurs* shows us that while life is resilient, it is not static. While changes to Earth's climate and ecosystems is usually gradually, sometimes things happen that cause sudden, rapid changes—like an asteroid or human activity.

(Top) Visitors view an immersive, animated video depicting the impact of the asteroid and the aftermath on Earth for the following 10 years.

(Above) A visitor reads about Coryphodon, a plant-eating Pandodont mammal, resembling the modern-day hippo.

© KYLE FLUBACKER PHOTOGRAPHY + FIELD MUSEUM



Head of weevil larva, Oxycorynus melanocerus, whose role in pollinating a parasitic plant in Brazil was recently described in a paper in Applied Entolmology.

Courtesy of Bruno de Medeiros, Negaunee Assistant Curator of Pollinating Insects, Field Museum

EXPLORING INVISIBLE REALMS

50 years of scanning electron microscopes at the Field Museum.

BY JANET HONG, SENIOR PROJECT MANAGER FOR EXHIBITIONS

Back in 1973, the Museum acquired its first scanning electron microscope (SEM). This amazing machine allowed entry into the fantastic, minute worlds contained in everything from larva heads to the plaque on human teeth. Museum scientists were so thrilled with the images they created an exhibition entitled "Below Man's Vision," two versions of which were toured by the Smithsonian and the American Dental Association.

Starting October 17, stop by the Searle Family Lounge on the second floor of the Museum to learn about the legacy of the Field's SEM-based research. Discover extraordinary explorations going on right now with our current in-house machine.

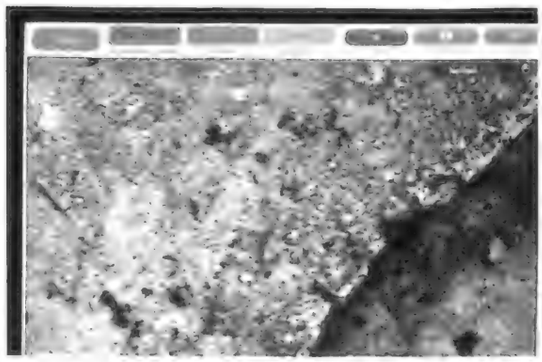
You can see and touch the Museum's second SEM, the old Amray 1810, and learn why specimens were coated in gold before entering the machine. Discover how Stephanie Ware, Manager of Morphology Labs, enables researchers to use our present-day Hitachi SU7000—capable of magnification up to 2 million times the original. Learn how this powerful tool helps scientists like Robert A. Pritzker Curator of Meteoritics and Polar Studies Philipp Heck, PhD, study minute details in meteorites and stardust that formed before our solar system began.

MICROSCOPIC MADNESS!

BY JONATHAN MEISENBACH, MANAGER OF PUBLIC PROGRAMS

If you could look at something under a microscope, what would you want to look at? A mosquito? A grain of sand? The penny in your pocket? You may have used an optical microscope in school to get a better look at something small. These traditional microscopes use light and glass lenses to magnify a specimen, yielding a maximum magnification of about 1,500 times the original size of an object. But what if the thing you want to look at is so incredibly tiny that an optical microscope just isn't powerful enough?

Enter the **scanning electron microscope (SEM)**. Using a beam of electrons, a SEM can magnify an object up to 2 million times! Field Museum scientists have used this high-tech microscope to find silicon carbide grains in a meteorite that are older than our sun. On the terrestrial side, researchers can view individual grains of pollen from a plant. For a limited time this fall, visit the *Grainger Science Hub* and participate in a daily live demonstration using a tabletop version of a scanning electron microscope. Stop by to catch a glimpse of what the world looks like at the nano-scale!



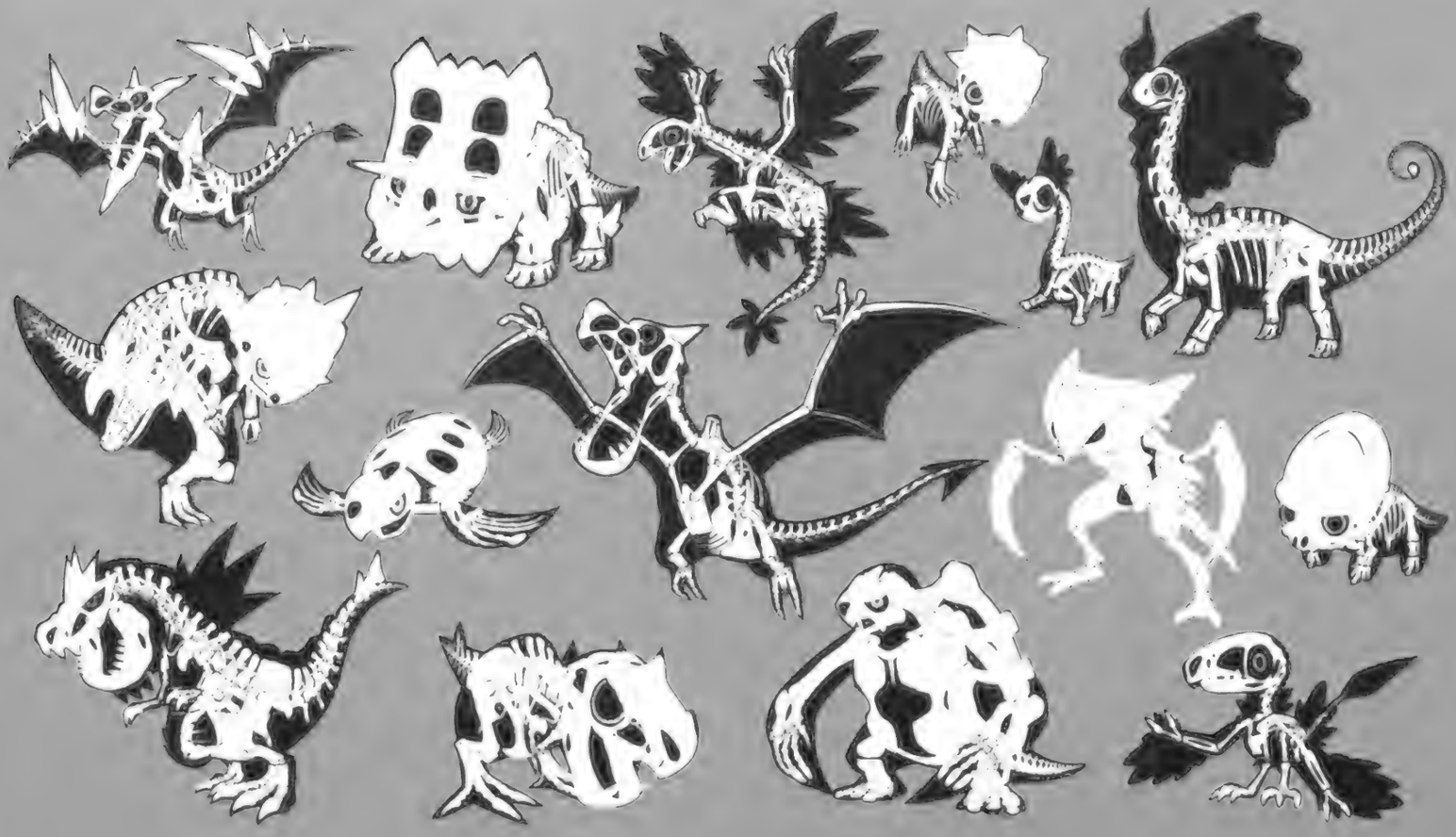
(Above, top) Loading a sample (dinosaur bone) into the Hitachi TM4000Plus tabletop scanning electron microscope.

(Above, bottom) Monitor display of a dinosaur bone magnified by the tabletop SEM.

Special Exhibition

POKÉMON FOSSIL MUSEUM

Presenting Sponsor: NORTHERN TRUST



ANCIENT POKÉMON, REAL-WORLD FOSSILS.

Pokémon Fossil Museum, the Japanese exhibition comparing fossil Pokémon with real-world fossils, debuts outside Japan for the first time at Chicago's Field Museum in May 2026! See real fossils and casts like SUE the *T. rex* alongside Pokémon like Tyrantrum and Archeops, and learn how fossils are studied in both worlds. Featuring Pokémon "Professors," Excavator Pikachu, and Field Museum scientists.

The skeleton illustrations for Fossil Pokémon are an artist's rendition.

WHAT IS A RAPID INVENTORY?

BY MALAYA TINDONGAN, ASSISTANT EDITOR

You may have heard the phrase Rapid Inventory while scrolling through the Field Museum website or flipping through pages of *In The Field*—but what is a Rapid Inventory, and why is it significant?

Rapid Inventories are modern-day expeditions to the Andes-Amazon region to survey biological and cultural assets of a priority landscape—an area that has high conservation or ecological value.

The surveys cover plants, fishes, herps, mammals, and birds to indicate habitat types and their conditions. The focus is on remote, megadiverse areas in need of conservational support and are often lacking in formal protections. This work has led to the conservation of 29.2 million acres of land and the establishment of almost 20 new conservation areas in the Andean foothills and Amazonian lowlands, over the last 25 years—including Medio Putumayo-Algodón established in Peru this year. Medio Putumayo-Algodón's establishment was based on data from a 2016 rapid inventory conducted by the Museum, which revealed the presence of many endangered or vulnerable animals, such as pink river dolphins, 5-foot-long giant armadillos, and woolly monkeys.

Requests for inventories typically come from the communities themselves, NGO's, research institutions, and national or regional governments. The requests are met with a collaborative effort among locals, researchers, and stakeholders to support the wellbeing of communities and conservation of biodiversity. These expeditions begin with mapping out the area, noting major habitats, ecological features, government structures, conservational and management efforts, and decision-making entities. Fieldwork starts with scientists collaborating with long-term residents to survey the plants and animals in the area. Then, the current conservation status is reviewed and threats are documented.

Social scientists, government officials, NGO representatives, and local leaders work with the communities in the area to collaboratively identify patterns of natural resource use and relationships with outside groups. Assets of the area's communities serve as engagement for long-term conservation participation to address threats to local peoples and natural resources.

Once fieldwork is complete and the data is collected, preliminary findings are brought to local and national decision makers. Findings from the survey and communication among stakeholders are summarized into practical suggestions for conservation of the surveyed area. Communication with in-country partners continues over the following months and years to relay the team's suggestions, reports, and products to local and international decision makers who are able to set priorities and organize conservation action.

(Opposite, bottom) Two team members of Rapid Inventory 32 work late at night in the forests of Guyana.

(Above) Team members of the 33rd Rapid Inventory survey Alto Rio Ica in Brazil from a boat.

SPECTACULAR TRILOBITE REVEALS EXCEPTIONAL EYESIGHT

BY PAUL MAYER, COLLECTIONS MANAGER OF FOSSIL INVERTEBRATES, GANTZ FAMILY COLLECTIONS CENTER

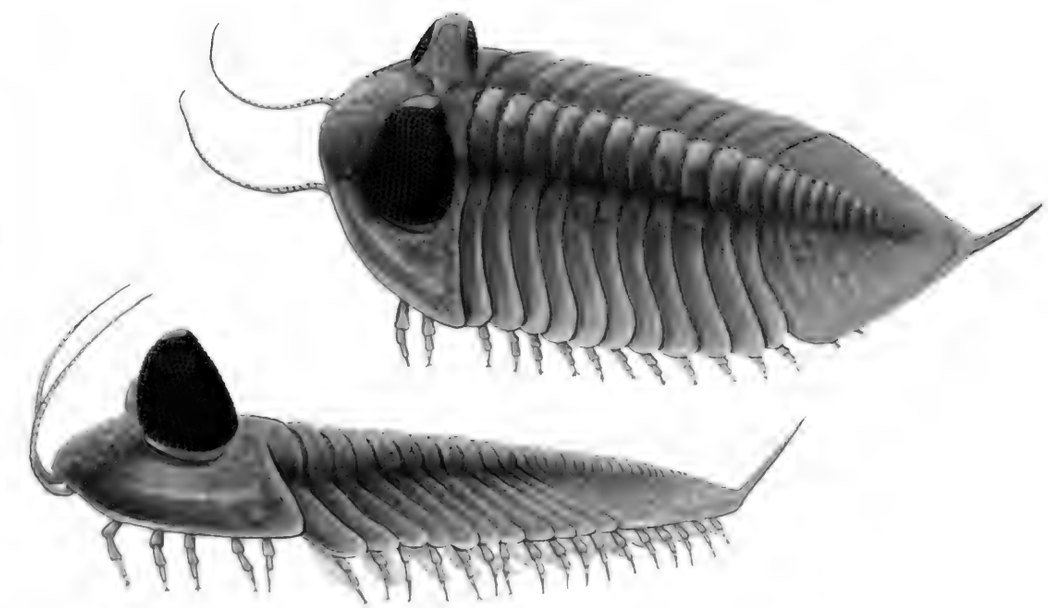
In 1912, the Field Museum purchased a collection of fossils from Joise Pratten, daughter-in-law of the collector Henry Pratten. Pratten was a geologist and a member of the David Dale Owen's geology expedition that surveyed Wisconsin, Iowa, and Minnesota in the early 1850's.

One of the specimens in this collection was a dalmanitid trilobite with large eyes that Pratten collected from the Devil's Back Bone, a half mile long ridge of Middle Devonian (380 million year old) limestone paralleling the Mississippi River near Grand Tower, Jackson County, Illinois.

In 1933, then Field Museum Curator of Fossil Invertebrates Sharat Kumar Roy described this specimen as a new species of trilobite, *Dalmanites pratteni* (catalog no. 16704). One of the most remarkable features of this fossil is the more than 700 lenses per eye, making this the largest known schizochroal eye. Schizochroal eyes are unique to two groups of trilobites, the dalmanitids and phacopids. Schizochroal eyes differ from other compound eyes because they have thick, biconvex lenses that do not touch each other and each lens has its own cornea. The eyes sat high up on the trilobite's cephalon (head region) and gave this trilobite nearly a 360 degree field of vision. This means the animal could see objects in front of it, to its side, and behind it without having to move its head.

"The exact number of lenses cannot be determined, as not all of them are preserved, nor are the areas which they occupied distinctly outlined," Roy wrote. He reported only 42 lenses per eye in his description of the specimen.

There is some damage to both eyes with chipped areas and partially overlapping rows of eyes making an exact count impossible. I used images of the eyes and illustration software to estimate the number of lenses by filling in the geometric pattern they exhibit. I counted 730 lenses on the right eye and 712 lenses on the left eye, but both eyes are incomplete. By comparing the two eyes and the pattern of lenses I estimate that there were just over 740 lenses per eye.



The structure of some individual lenses is exposed in this specimen due to differential weathering of the individual lenses. This played a key role in a 1975 study by Euan N. K. Clarkson and Riccardo Levi-Setti. They discovered that the large round lenses were composed of a doublet structure that followed the principles that Descartes (1637) and Huygens (1690) worked out in 17th century to eliminate spherical distortion from lenses. This doublet structure allowed the lens to gather more light and focus it on a single point and strongly indicates that these trilobites had better vision than previously understood.

(Top) Reconstruction of Dalmanites pratteni *showing how it might have looked as a living animal 380 million years ago.*

(Above) The large eye of of Dalmanites pratteni *(FMNH P 16704), showing the arrangement of the lenses in rows.*

THE WINNERS!

2025 *In The Field* Photography Contest

THE WINNERS!

The Field Museum is pleased to announce the winners of the 2025 *In The Field* Photography Contest!

Thank you to all who participated. We loved seeing the Museum and the natural world through your eyes. Make sure to join us again next year and, in the meantime, view these stunning photos in-person from November 4, 2025 through April 4, 2026 on the ground floor of the Museum, near the exit to *Inside Ancient Egypt*.

CATEGORIES:

Museum Moments

B. Paradise Found
Photographer: Soney Olhava

Looking out at the ocean from behind a palm tree in Traveling the Pacific.

D. African Fashion from the Eyes of a New Generation
Photographer: Aleah Tillett, age 9

In the presence of iconic images of African fashion, this young beauty stands proud, showcasing the rich legacy of her heritage—an inspiring reminder of the power of culture and creativity.

Urban Wildlife

A. Mulling It Over
Photographer: Jeffrey Nelson

A momma fox teaches her kit how to pick a good mulberry.

Dancing in the Air: The Egret's Ballet
(on page 15)
Photographer: Anni Huang, age 14

As people feed tarpon on Florida's Islamorada key, a Great Egret (*Ergetta alba*) perches casually on a post. Suddenly, it unfurls its wings and lifts off in a graceful ascent.

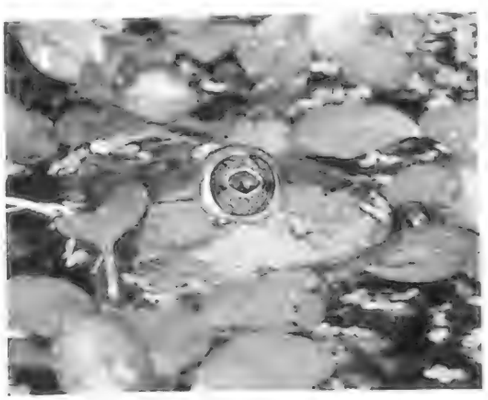
Real-Life Diorama

C. The Turtles of the Washington Park Lagoon
Photographer: Carolyn Markel

Painted turtles (*Chrysemys picta*) and red-eared sliders (*Trachemys scripta elegans*) sharing a log.

E. Hidden Eyes
Photographer: Hayden Al Harash, age 15

An American Bullfrog (*Lithobates catesbeianus*) one of the most common frogs in the state of Missouri, but still an amazing creature.



(C) MANUEL RUEDI

BATS JOIN THE FIGHT AGAINST PESTS IN MADAGASCAR

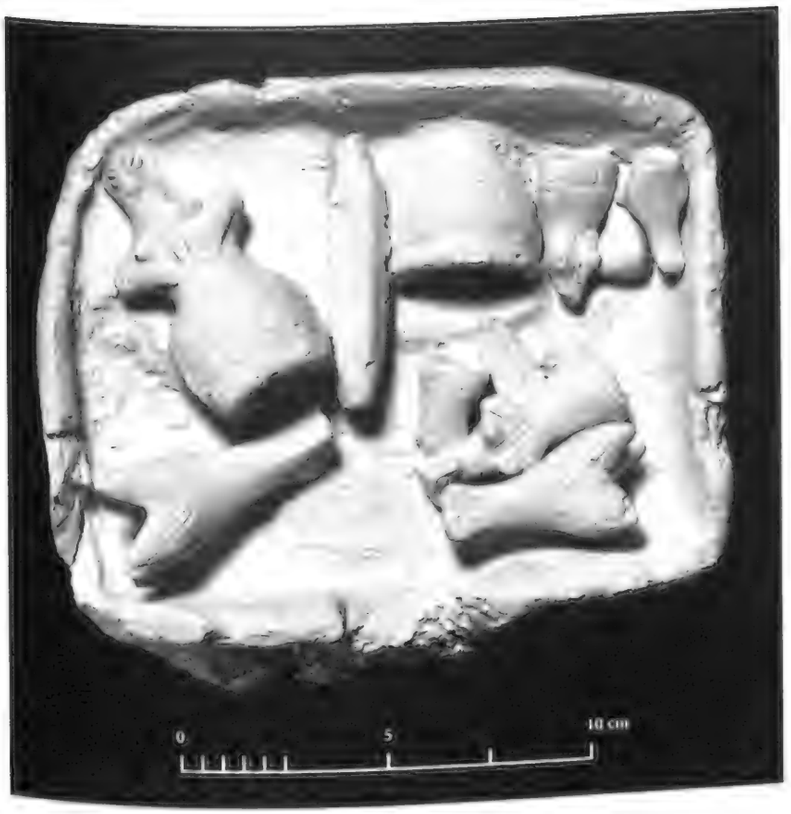
BY STEVE GOODMAN, PHD,
MACARTHUR FIELD BIOLOGIST

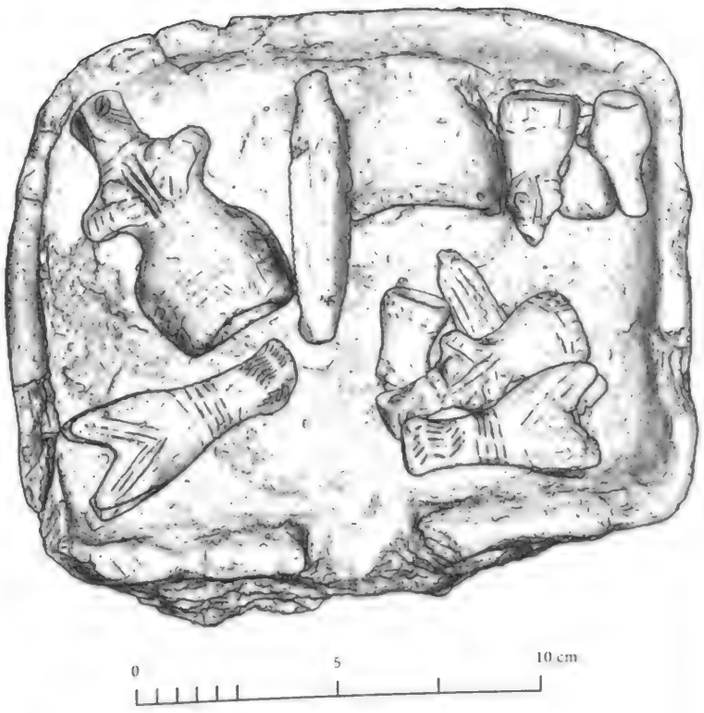
When you hear the term "service animal," the first thought to pop into your head might be a Golden Retriever or German Shepherd. But for people like me and my colleagues, bats top the list because of the "ecosystem services" they provide to humans. This includes pollinating forest plants and crops, spreading seeds of forest fruits across large distances, and consuming insects that damage crops and spread disease to humans and livestock. In Madagascar, where I have lived and worked for 10 months a year for more than three decades, insect-borne diseases and pest-related agricultural losses are critical challenges faced by rural farming communities, many of whom depend on crop production for income and subsistence. Agricultural production on this island nation is a major cause of deforestation and biodiversity loss. Insect-driven crop losses superimposed on a growing population forces farmers to clear more forested areas for planting.

Insectivorous bats are natural enemies of crop pests, and it stands to reason that protecting bat populations in agricultural areas would help safeguard the service bats provide to humans. However, very little research has been carried out to provide hard evidence in support of these assumptions. Over the past several years, and under the direction of Carme Tuneu Corral of the Natural Sciences Museum of Granollers (Spain), I have been a part of a team of scientists, who have been investigating the potential of insectivorous bats in protected areas of northern Madagascar to suppress agricultural pests.

In total, we collected 500 fecal samples from 15 species of bats in several locations –including 12 species captured exclusively inside protected areas– and applied DNA metabarcoding to determine their diets. Our findings, published recently in *Agriculture, Ecosystems & Environment*, revealed that most of the studied bat species consumed insect pests that affect rice, the critical base of the national diet, and other crops. We also identified several vectors of disease, such as mosquitoes that transmit malaria to humans and domestic animals. Overall, 55 insect species detected in the diet of bats were identified as agricultural pests, and 15 as human or livestock-disease vectors. The results indicate that certain bat species roosting in protected areas have the dispersal capacity to forage in nearby agricultural landscapes, contributing to pest suppression and disease risk reduction. Thus, protecting bat roosts within and around protected areas may offer a natural means to enhance agricultural productivity and public health. These findings underscore the need to integrate ecosystem services into conservation and land-use management strategies, fostering sustainability and rural welfare in Madagascar.

(Above) Female Rousettus obliviosus from the Comoros, a group of islands off the NW coast of Madagascar, carrying a newborn clinging to her chest. This is another fruit-consuming species that is important for forest tree seed dispersal and regeneration.





QUEENS OF THE BRONZE AGE

BY SABINA CVEČEK, PHD, MARIE SKŁODOWSKA-CURIE GLOBAL POSTDOCTORAL FELLOW, NEGAUNEE INTEGRATIVE RESEARCH CENTER

Can you imagine tracing your family history only through your mother's side? That might feel unfamiliar, especially since in much of North America and Europe today we recognize relatives on both our mother's and father's sides. Anthropologists refer to this two-sided approach as bilateral descent.

For years, however, scholars have debated whether Neolithic and Early Bronze Age farming communities, which inhabited Aegean/modern Greece around 8,000–4,000 years ago, were organized around matrilineal or patrilineal descent. In some cases, scholars inferred not only matrilineal descent but also female rule, known as matriarchy. However, does tracing kinship through the mother necessarily imply political power or female dominance?

In an article I recently published in *Archaeological Dialogues*, I explore why archaeologists have argued for matrilineal descent and female rule, and what kinds of evidence they used to support their claims. This includes female figurines, such as the Neolithic house model from Platia Magoula Zarkou (see above), settlement patterns, and the clues suggesting that men were not part of daily life in these communities throughout the year. I argue that matrilineal kinship does not equal female rule. However, matrilineal kinship with egalitarian relations between genders remains a possibility for some of these small-scale farming communities.

Matrilineal kinship refers to a system in which family relations—including descent, inheritance, and family identity—are traced through the mother's side rather than the father's. Often, those communities are known for more egalitarian relations between genders. Such relations have been ethnographically documented among communities in North America, Southeast Asia, and beyond.

The article sparked a lively debate, with three archaeologists and socio-cultural anthropologists contributing their commentaries in the same journal issue. My response, titled "Fostering interdisciplinary dialogues," reflects on the importance of bridging archaeology and socio-cultural anthropology. Too often, these fields speak past each other—despite having so much to gain from collaboration.

At the Field Museum, I am currently based as a Marie Skłodowska-Curie Global Postdoctoral Fellow with William A. Parkinson, PhD, Curator and Associate Director of Anthropology, with a project funded by the European Union. I have the privilege of working across disciplines to ask difficult questions about how we reconstruct kinship, gender, and power in the deep past. I believe that breaking down disciplinary silos not only sharpens our scholarship but also helps us build more inclusive and intellectually generous research communities.

(Above) Model of a house and its members from the Neolithic site of Platia Magoula Zarkou in Thessaly, Greece. This model has been interpreted by some researchers as evidence for female rule. Scale in centimeters.

The Changing Face of Science

AN INTERVIEW WITH **LESLEY DE SOUZA, PHD**
SENIOR CONSERVATION ECOLOGIST

ITF: WHAT IS YOUR ROLE AND YOUR RESPONSIBILITIES AT THE FIELD MUSEUM?

I am part of the Museum's Keller Science Action Center, which focuses on conservation action on the ground. Our team works to support governments, Indigenous organizations, and communities to create effective conservation areas in the Andes-Amazon-Guiana region. As an ichthyologist, I have projects that advance our understanding of Neotropical fishes and freshwater ecosystems. I've also helped to develop the environmental DNA (eDNA) work used by our team and have implemented the tool in several projects in South America as well as in the Chicagoland area.

ITF: HOW DID YOU BECOME INTERESTED IN SCIENCE AND CONSERVATION?

My fascination with science and the natural world began as a child. I often spent time outdoors with my family and had a lot of curiosity to explore. Visiting national parks, state parks, and other conservation areas for hiking, camping, fishing, and other fun activities has been an inspiration to the current work I do. The love of natural spaces drives my passion for conservation work.

ITF: TELL US ABOUT YOUR WORK IN GUYANA. WHAT ARE YOU WORKING ON CURRENTLY?

I currently lead the Guyana program on our team. We have several ongoing projects to advance conservation impact from large-scale to species-specific work. In November 2024, our team conducted a rapid inventory in a 1.5 million-hectare area in the southern forests of the country. We are working with the government, Indigenous communities, and NGOs to support the creation of a conservation area in this space. We are also collaborating with several communities to research individual species like the pink river dolphin, giant armadillo, and cottontail rabbit, as well as a large-scale environmental DNA project.

ITF: WHAT IS YOUR FAVORITE PART OF YOUR ROLE AT THE FIELD MUSEUM?

I am honored to have the opportunity to contribute to conservation impact on the ground in the places we work. In the Museum, my role allows me to inspire and mentor the next generation of women in science.

ITF: WHAT HAS BEEN YOUR BIGGEST MOTIVATION IN YOUR WORK AND CAREER?

The urgency of the biodiversity and climate crisis is a big motivator for my work. More recently, becoming a mother has magnified my drive to contribute to the preservation of the natural world and its cultures.

ITF: WHAT ADVICE OR MESSAGE WOULD YOU SHARE WITH THE NEXT GENERATION OF SCIENTISTS?

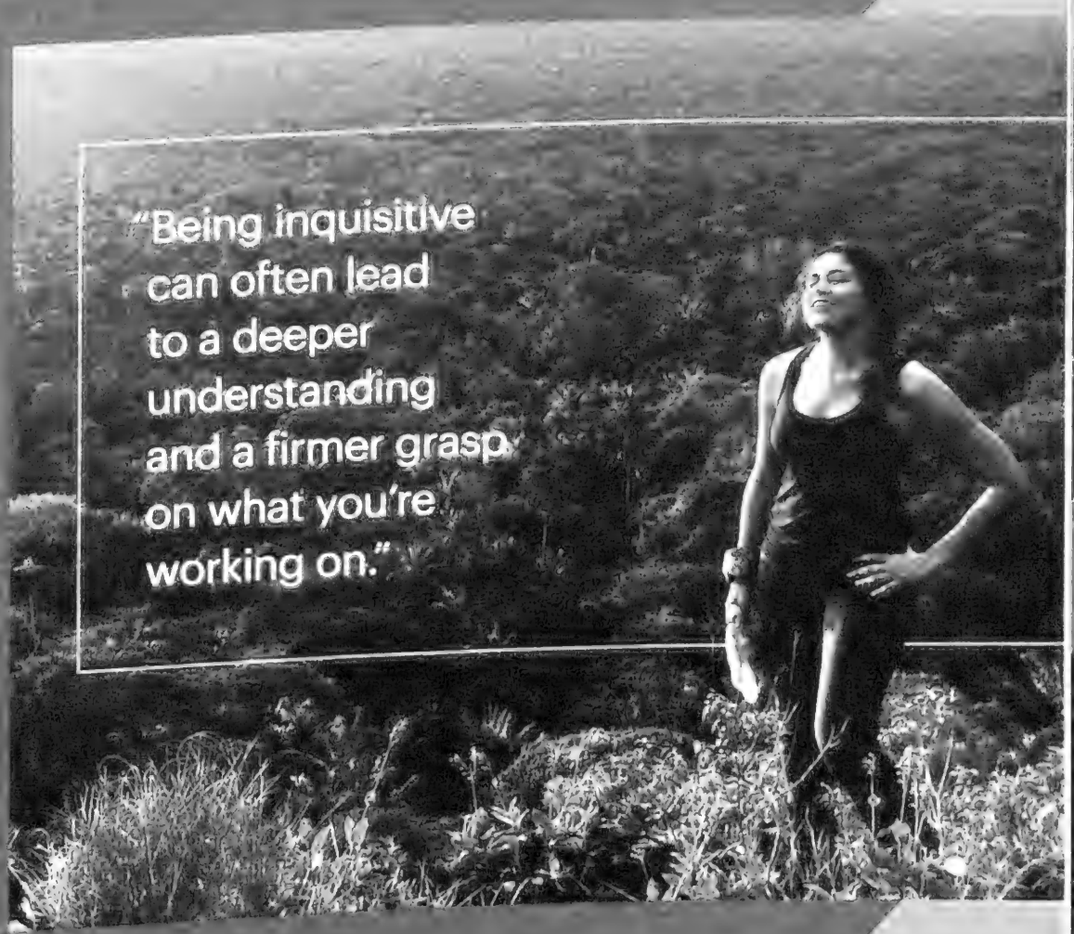
Stay curious, ask questions, and build a support network. Being inquisitive can often lead to a deeper understanding and a firmer grasp on what you're working on. Pursuing your career with a curious mind will open your eyes to new opportunities and discoveries.

Find mentors and a support network to help you along your journey as a scientist. This will be critical as you go through different phases of your career.

The Changing Face of Science: Lesley de Souza is now open at the Field Museum in the Gary C. Comer Family Gallery. Don't forget to check out *The Changing Face of Science: Sara Ruano* also open now in the Comer Gallery.

(Opposite) Lesley collects fishes on a rapid inventory in southern Guyana.

(Below) Lesley above the Amazonian rainforest after a long day collecting fishes.



LESLEY DE SOUZA, FIELD MUSEUM

SALISH WOOLLY DOGS RETURN THROUGH ART AND STORYTELLING

BY MALAYA TINDONGAN, ASSISTANT EDITOR

(Above) Eliot White-Hill, Kwulasultun

(Top, right) 'Si:em Slhelhni' i tu Sqwiqwmi's (High Ranking Young Woman and her Wool Dogs) / Don't Want Your Sheep Wool created by Eliot White-Hill, Kwulasultun

Dogs are revered as loyal pets that many of us have at home. However, for the indigenous Coast Salish people, a now-extinct breed of dog called Salish Woolly dogs had cultural and social significance.

Coast Salish refers to a group of peoples from over 40 Nations in the Pacific Northwest. Salish people bred Woolly dogs: a small-to-medium-sized dog with fluffy white fur. These dogs were the result of a unique domestication of wolves over a period of 6,000–8,000 years. They were kept separate from other dogs to preserve certain important features like their fur, which was sheared and spun to create fiber for textiles.

Considered symbols of status, these dogs not only had a physical purpose but were also special to the people who owned them. They were passed down maternally, from mother to daughter, and were an indicator of wealth.

Woolly dogs have now been extinct for over 100 years. This was partially a result of the smallpox epidemic, as well as cultural erasure by colonial institutions like the Canadian government, the Hudson Bay company, Indian agents, and police.

Some descendants of the Salish community are making an attempt to bring Woolly dogs to life through acts of reclamation, like Salish Coast artist Eliot White-Hill, Kwulasultun, a member of the Snuneymuxw tribe.

"All of my art is storytelling, especially telling stories about coast Salish culture, our worldview, our way of life, and also stories about my own lived experience as an indigenous person in Canada," said Eliot.

Eliot is collaborating with the Field Museum to design an exhibition for one of the rotating gallery spaces in *Native Truths: Our Voices, Our Stories* teaching about Woolly dogs through his art, and is creating his own children's book. He has also contributed to a book, *Teachings of Mutton*, a collaborative effort by over 15 individuals telling the story of Woolly dogs through art, stories, and interviews.

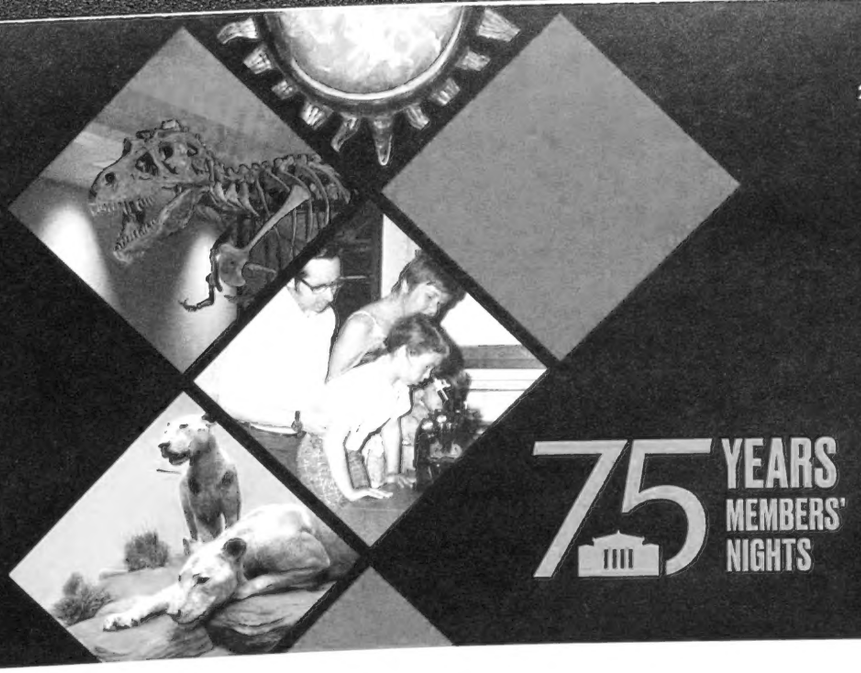
Eliot hopes that visitors to the exhibition will learn about the rich complexities of indigenous cultures and push back against oversimplification of cultures and groups.

Visit Woolly Dogs at the Field Museum coming January, 2026!

CELEBRATING 75 YEARS OF MEMBERS' NIGHTS:

A Tradition of Discovery and Gratitude

BY PATSY GONZALEZ, MEMBERSHIP MANAGER



In May 2026, the Field Museum will proudly celebrate the 75th anniversary of Members' Nights—an enduring tradition that has grown into one of the most anticipated events on our calendar.

The very first Members' Night was held in 1951, a time when the Museum was working to build deeper connections with the public. The idea was simple, but powerful: open the Museum after hours and invite members behind the scenes to meet the scientists and experience the work that often goes unseen. It was a chance to bring the Field to life in a more personal and interactive way.

Over the decades, what started as a small gathering has evolved into a vibrant, two-night celebration that draws thousands of members each year. The event offers rare, close-up access to the Museum's vast collections and groundbreaking research—from ancient mummies and fossil prep labs to XCT scanners in action. Throughout the Museum on these two special nights, members are greeted by the scientists and volunteers who bring these specimens and stories to life.

Beyond the exhibits and discoveries, *Members' Nights* are a celebration of community. These evenings honor the incredible work of our scientific staff—and equally, the steadfast support of our members. Through decades of change, expansion, and even uncertainty, our members have stood with us, helping ensure that the Field Museum remains a place of learning, exploration, and wonder. Together, we've built not just a Museum, but a gathering place where curiosity connects us across time and space—a beacon for anyone seeking to understand their place in the vast story of the universe.

As we approach the 75th anniversary in 2026, we look back with pride and gratitude at the generations of members who have made these nights possible. You've helped create a space where science is shared, questions are encouraged, and curiosity is always welcome.

Mark your calendars for May 14 & 15, 2026, when we'll celebrate 75 years of wonder, discovery, and connection. Here's to many more nights of curiosity and joy—together!

SPROUT A JOURNEY OF DISCOVERY

Spark curiosity in your loved ones with a gift membership to the Field Museum! Help them take a journey with us through time and space to connect with nature and the human story. You never know what you'll discover at the Field Museum.

- Free basic admission, along with free or discounted tickets to special exhibitions
- Invitation to our Annual Member's Nights and many more member-exclusive events
- Discounts year-round on education programs and in the Museum's stores and restaurants

And so much more!

FIELD MUSEUM

Bringing someone to the Field Museum through a gift membership can give that person memories for a lifetime. Gift memberships are now active immediately for the recipient to begin their journey with us. To learn more about our gift memberships, email us at membership@fieldmuseum.org or telephone us at 312.665.7700. Thank you for continuing to support and share the Field Museum's scientific support, conservation, and shared cultural experiences.

Escape the chill and unwind at the cozy Members' Holiday Lounge!

Take a break from the holiday hustle and get cozy with your favorite dino friends! Members and Donors visiting during the bustling holiday week are invited to join us for a quiet break in the Museum's Founders' Room and don't forget to capture your perfect holiday photo at the Museum.

The Members' Holiday Lounge will be open Friday, December 26 through Sunday, January 4 from 10am–3pm.

Museum Hours

The Field Museum is open from 9am–5pm every day except Thanksgiving and Christmas Day, with last admission at 4pm. For special hours, parking, and public transportation options, visit **fieldmuseum.org/visit**.

The Field Museum salutes the people of Chicago for their long-standing support of the Museum through the Chicago Park District.

UNITED AIRLINES Official Airline of the Field Museum

This program is partially supported by a grant from the Illinois Arts Council Agency.

For up-to-date information for all member events, visit **FIELDMUSEUM.ORG/MEMBEREVENTS**

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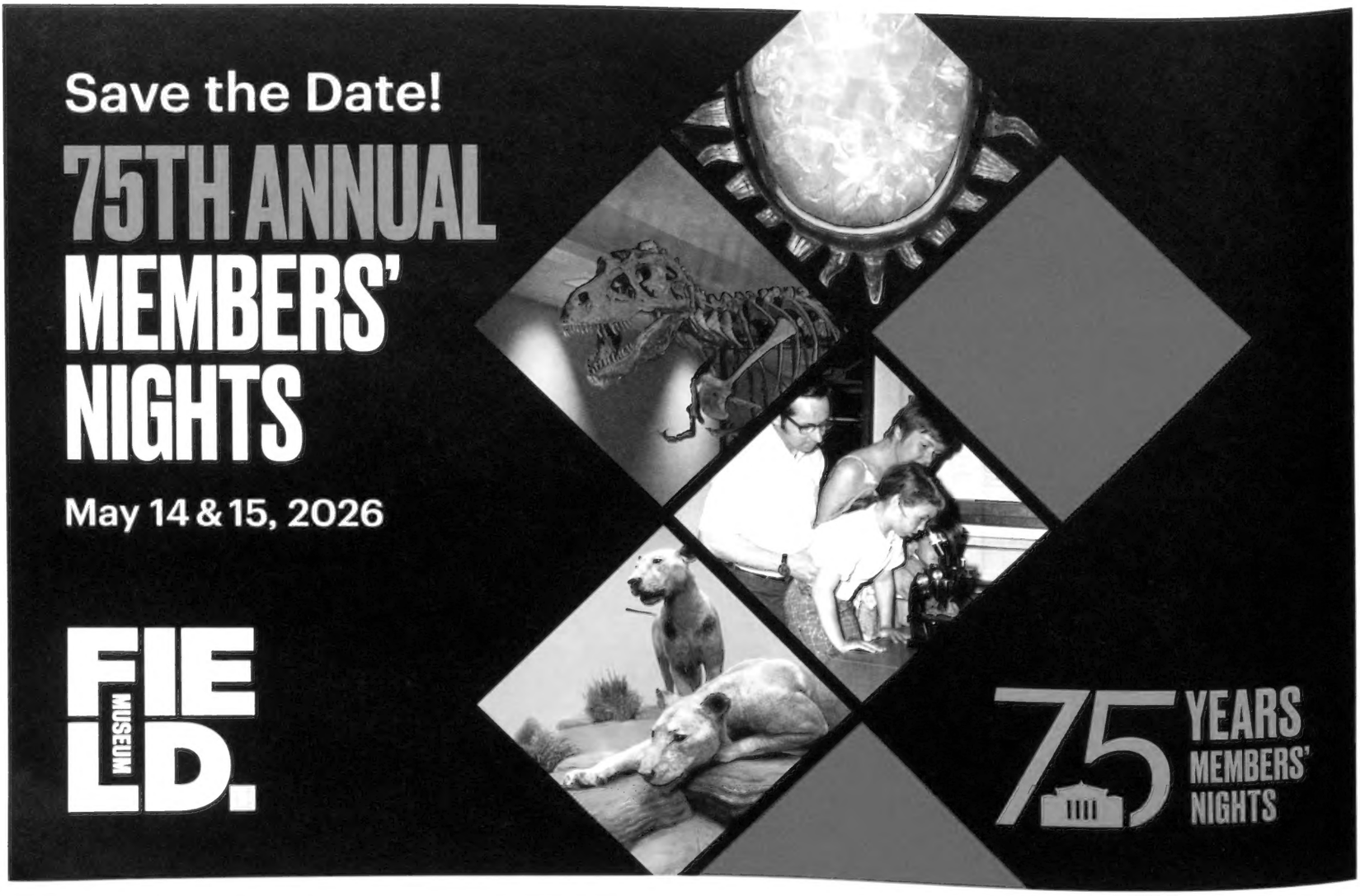
Make a gift in support of the Field Museum!